

THE TREATMENT OF A CASE  
OF RHODESIAN SLEEPING SICKNESS  
BY THE PREPARATION KNOWN AS  
'BAYER 205'

BY  
WARRINGTON YORKE

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The patient (G. J.) contracted the disease in the Seringe district of North Eastern Rhodesia on the Congo Zambesi Watershed. He was suddenly taken ill on 17th September, 1920, with severe headache, pains in the back and neck, great prostration and a temperature of  $105^{\circ}$  F.; during the first eight days of the illness the temperature varied between  $104^{\circ}$  F. and  $106^{\circ}$  F. Trypanosomes were found in the blood on 27th September, and the patient was thereupon sent to Broken Hill, where he arrived on 24th October, and was treated by Dr. Wallace with tartar emetic, intravenous injections (2.5 to 3 grains) being given every other day. A little later intramuscular injections of antimony oxide ( $\frac{1}{50}$  grain) and soamin (2 grains) were also given. Between 24th October and 26th December 3.28 gm. of tartaric emetic, 0.1 gm. of antimony oxide and 2.47 gm. of soamin had been administered, with only a moderate degree of benefit to the patient: trypanosomes were frequently found in the blood and there were several severe febrile disturbances. Between 26th December and 15th January, 1921, thirteen injections of stibenyl (in all 3.05 gm.) were given. These injections were, however, badly borne, and as trypanosomes were present in the blood on 16th January, the original treatment, with tartar emetic, antimony oxide and soamin, was resumed. Things improved somewhat, and on the 3rd February the patient was well enough to leave for England. At Cape Town, and on the voyage, he had further injections of tartar emetic.

When the patient reached Liverpool on 12th March, he was in fairly good condition; trypanosomes were not present in his blood

(inoculated rats did not become infected), there was well-marked autoagglutination of the erythrocytes, and the weight was 144 lbs. Daily examinations of the blood were negative until 18th March, when a few trypanosomes were found. Inoculation of rats showed the parasite to be *T. rhodesiense*. Intravenous injections of tartar emetic in doses of from 2 to 3 grains were then given on alternate days. Neither these nor injections of atoxyl, however, seemed to exert any influence on the course of the disease. Violent febrile disturbances accompanied by severe headaches and great prostration, and the appearance of trypanosomes in the peripheral blood in considerable numbers, occurred with the utmost regularity every five or six days, and the patient went steadily down hill.

In view of the fact that the infection appeared to be antimony and arsenic resistant, I endeavoured to obtain from Professor Mayer, of the Hamburg School of Tropical Medicine, a small quantity of a preparation called 'Bayer 205', manufactured by the firm of Friedr. Bayer & Co., Elberfeld. Although this drug—the constitution of which was not disclosed on account of the state of the Germany chemical industry—had not been used in any case of human trypanosomiasis, it had been employed with remarkable results in the treatment of experimental trypanosomiasis of animals, records of which had been recently published by Haendel and Joetten (1920) and by Mayer and Zeiss (1920).

Professor Mayer informed me that he was unable to comply with my request to let me have a supply of the drug for trial, but stated that if I sent the patient to Germany they would be glad to treat him at the Hamburg School. This, unfortunately, resulted in some loss of time, as I did not like the idea of sending the patient to Germany to be treated with a proprietary article, the composition of which was not disclosed and which could not be sent out of the country. However, as notwithstanding the most rigorous treatment the patient's condition got steadily worse, I went critically through the above mentioned papers again and was so impressed by the results recorded, that I overcame my own scruples and those of the patient, with the result that he left for Hamburg on 5th July, 1921. During his eight and a half months illness the patient had received, in addition to the other drugs mentioned, 22·7 gm. of tartar emetic, and at the time he left for Hamburg his weight had fallen to

132 lbs., he was suffering from frequent violent febrile disturbances, antimony and arsenic preparations were without any effect on the course of the infection, and the condition seemed almost hopeless.

The following details of the case are taken from a recent paper by Mühlens and Menk (1921), under whose care the patient was when in Hamburg. On 9th July, two days after his arrival, he had a rigor, accompanied by headache and fever, and trypanosomes were found in the blood. Treatment was immediately commenced, 'Bayer 205' 0.5 gm. in 5 per cent. solution being given intravenously. The injection was well tolerated; the fever subsided in six hours instead of in the customary thirty-six hours, and trypanosomes had disappeared from the blood within sixteen hours. The next day a second injection of 1 gm. in 10 per cent. solution was given, and this was repeated on the following day: both injections were well borne and the urine remained free from albumen or casts. The blood was examined twice daily during the following seven days, with negative results, and a further injection of 1 gm. was then given. As a small quantity of albumen and occasional red and white blood corpuscles appeared in the urine, no further treatment was administered. The patient improved remarkably, rapidly regained his sense of well-being and put on weight. Almost daily examinations of the blood were made, until 29th August, but with negative results: there were no further febrile attacks or any other untoward symptoms, and on 13th September the patient returned to Liverpool.

When I saw him on 15th September, I was greatly impressed with the remarkable improvement in his general condition: he had lost the anxious and weary expression which had been so characteristic for some months before he went to Germany, his weight had increased to 145 lbs., the blood was negative and sub-inoculated rats did not become infected, and the autoagglutination of the erythrocytes had disappeared. The urine contained a trace of albumen, otherwise the patient seemed perfectly well. The following day he left Liverpool for his home in South Wales. On 5th November, 1921, he returned to Liverpool for further examination. He appeared in excellent health, and stated that he never felt better in his life and had played two rounds of golf daily without the slightest distress. The blood was examined microscopically and also inoculated into three rats,

with negative results: there was no autoagglutination of the erythrocytes or any other sign of the disease: the weight had increased to 150 lbs. (patient's normal weight), the urine, however, still contained traces of albumen. On 11th November he sailed for South Africa.

The above record is of peculiar interest, as it relates to the first case of human trypanosomiasis treated with adequate doses\* of 'Bayer 205'. Whilst recognising that hasty and premature claims of success in the treatment of a disease like sleeping sickness are to be deprecated, and that the further history of the patient alone can decide whether a real *therapia sterilisans magna* has been effected, the facts that the disease was of at least eight and a half months standing at the time of treatment with 'Bayer 205'; that the patient was extremely ill and had been getting steadily worse for months, that the infection was completely resistant to the ordinary preparations of antimony and arsenic; that since the administration of 'Bayer 205' all symptoms of the disease have disappeared, the general condition of the patient has improved enormously, his weight has increased by 18 lbs., his blood has been free from parasites and non infective to rats for an observation period of four months—these facts, considered in the light of the usual history of cases suffering from *T. rhodesiense*, warrant the hope that in 'Bayer 205' we have a drug of exceptional trypanocidal power.

#### REFERENCES

- HAENDEL, and JOETTEN (1920). *Berlin Klin. Woch.*, Vol. LVII, p. 821.  
 MAYER, and ZEISS (1920). *Arch. f. Schiff- u. Trop.-Hyg.*, Vol. XXIV, p. 257.  
 MÜHLENS, and MENK (1921). *Münch. Med. Woch.*, Vol. LXVIII, No. 46, p. 1488.

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\* Mühlens and Menk (loc. cit.) give details of the administration of the drug to a case of *gambiense* infection in March, 1920, but only two small doses (0.2 gm.) were given at an interval of a week. A relapse occurred and the patient was then treated with other drugs.